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# COTTON WAREHOUSES:

## STORAGE FACILITIES NOW AVAILABLE IN THE SOUTH.[1]

By Robert L. Nixon, *Assistant in Cotton Marketing.*

### INTRODUCTION.

This bulletin is the result of a survey made for the purpose of determining the extent of storage facilities now available in the cotton-producing States. An attempt has been made to determine not only the storage capacity of the cotton warehouses now in use, but to learn something of the conditions under which cotton is stored, the charges for storage, the insurance rates paid, and other factors affecting cotton in storage. Particular attention was given to the different types of buildings with reference to cost of construction, insurance rates, and general economy in handling cotton, and also to the distribution of these storage houses with reference to the production of cotton, and the availability of such warehouses to farmers who may wish to store their cotton. Efforts also were made to determine something of the importance of the warehouses in protecting cotton from fire and damage by weather, in handling and marketing, and in financing the cotton crop. The relation of the cotton warehouse to other business and its importance to the farmer and to business men generally has been kept in mind.

The warehouse survey of Georgia and North Carolina was made during the early part of 1914, so the resulting figures, which are given in tabular form in this bulletin, relate to the amount of storage space that was available during the 1913–14 season, except in Table VI, which is an estimate of the storage space now available. Letters were sent to all ginners and cotton dealers in Georgia and North Carolina asking for the names and addresses of all cotton-storage companies, both public and private. A tentative warehouse list was made up from the replies to this inquiry, and a letter and blank asking for details as to cost of construction, storage capacity, insurance rates, and charges for storage were sent to each individual or company on the list. These were followed, in many cases, by other inquiries and special correspondence. In addition to this, the writer visited many of the warehouses and conferred with a large number of warehousemen, cotton dealers, and others interested in the cotton industry.

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[1] The figures in this bulletin relating to the storage facilities now available in the cotton belt were secured from a comprehensive survey of Georgia and North Carolina, and also by means of a letter of inquiry which was sent to all the county agents of the Farmers' Cooperative Demonstration Work of the Southern States. The work in North Carolina was done in cooperation with the Marketing Division of the Agricultural Experiment Station. In Georgia the survey was conducted entirely by the Office of Markets and Rural Organization. However, the State College of Agriculture furnished office space and extended other courtesies to the writer while making the survey which greatly facilitated the work.

Note.—This bulletin deals with the cotton warehouse situation of the South, with special reference to conditions in Georgia and North Carolina. An attempt has been made to determine what storage facilities are now available, the importance of the warehouse in financing the cotton crop, and the general relation of a system of warehouses to other lines of business. It should be of special interest to farmers, warehousemen, and cotton factors, merchants, and bankers of the South.

In August, 1914, when it became apparent that the price of cotton would be seriously depressed on account of a limited demand, it was obvious that there would be an unusual demand for storage space. In order to get data concerning storage facilities in the cotton-producing States, a letter of inquiry was sent to all the county agents of the Farmers' Cooperative Demonstration Work in the Southern States. This letter asked for the names of all warehouse companies in the sections where the various agents were located and the storage capacity of the buildings operated by these companies. The agents responded readily to this inquiry, and the results obtained enabled us to form a good idea of the available storage facilities throughout the South. In this connection it should be remembered that an immediate report was requested from the county agents. This made it impossible for them to make a very thorough investigation which would enable them to report all storage houses. Many of the cotton-producing counties have no agents, so the number of warehouses reported from this source is further limited. In addition, many of the nonproducing counties in the cotton belt where no agents are stationed have warehouses with a large aggregate storage capacity. Taking all of these facts into consideration it is quite evident that the reports from the county agents necessarily are far short of the actual number of warehouses in the various States. But these reports are especially valuable as a basis for comparison of conditions between the States where surveys have been made and the States where no such investigations have been conducted.

## IMPORTANCE OF THE WAREHOUSE IN FINANCING THE COTTON CROP.

Financing the cotton crop is one of the most difficult, and at the same time one of the most important problems confronting the southern farmer and the southern business man. In the light of all the facts, it seems reasonable to state that but little cotton would be stored or insured if it were not necessary to do so in order to negotiate loans with cotton as collateral. The banks are entirely willing to advance money on cotton on liberal terms when it is properly stored and insured, but they are not always able to advance these necessary funds. Even in years when prices are satisfactory, and but little cotton is held, it takes enormous sums of money to finance the marketing of the crop, and when the market is unsatisfactory and many persons wish to hold their cotton for better prices, it is almost impossible for the present banking institutions to supply the necessary funds. The farmer frequently has no operating capital and that of the bank is limited. Consequently, when a market for cotton practically disappears, it is impossible for the banks of the cotton-producing section to meet their obligations. Success in developing an adequate and efficient system of storage houses depends largely upon obtaining sufficient capital to finance the cotton crop. Many letters from bankers, warehousemen, and business men generally, indicate an entire willingness and even eagerness on their part to erect storage houses of sufficient capacity, if only money could be obtained in order to enable farmers and others to hold cotton.

It would seem that the banks would increase their capital stock to such an extent that they would be in position to advance all the funds needed. But it must be remembered here, as stated in connection with storing cotton, that it is only when the market is unsatisfactory that the farmer needs to hold his cotton and therefore needs an unusual amount of capital. The banks, of course, can not keep on hand unlimited funds to meet this occasional demand. It also must be remembered that the farmer is not always reasonable in his demand for funds at such a time. When cotton is bringing 13 or 14 cents per pound he often sells his crop as fast as it is ginned without reference to the disastrous effect it may have on the market, spends the proceeds, and devotes all his energies to raising a large crop the following year. While the cotton is growing he spends for his supplies on the basis of a full crop for which he expects to receive the maximum price. When, because of overproduction or unusual pressure on the market, the price falls appreciably, he finds that the merchant's equity in the cotton is greater than its cash value. He then expects the banks to advance him money on the basis of the prices that prevailed when conditions were favorable, or perhaps on the cost of production. While cotton is recognized as the best collateral it will not be accepted by business men on such conditions.

Bankers and other southern business men believe that cotton when properly stored and insured is the very best collateral. The most substantial bankers state definitely that they prefer it to real estate, and will advance funds on it as readily as on Government bonds. When making the survey of Georgia and North Carolina special efforts were made to determine whether the bankers in general regarded cotton as desirable collateral. They were practically unanimous in their opinion that it is the very best that can be offered.

From careful observation it appears that in North Carolina most of the loans on cotton are made by banks at a rate of from 6 to 8 per cent. The average would doubtless be 7 per cent or less. These same banks charge 8 per cent or more for ordinary loans on personal security or real estate. In Georgia the rate on loans on cotton ranges from 7 to 10 per cent. The average is probably about 8 per cent. This refers to comparatively small loans made by banks to individuals and small companies. Doubtless many of the Georgia cotton companies obtain money at the rate of 6 per cent. The rate on personal notes in Georgia ranges from 8 to 12 per cent, with an average of not less than 9 per cent. In both States the interest charged on store accounts (which is usually included in the selling price) ranges from 10 to 35 or 40 per cent. The average is not less than 20 per cent. All these facts show that in both States loans can be obtained when cotton is offered as collateral at a much lower rate than when personal security is given.

It can readily be seen that one of the greatest needs of the cotton farmer is to get away from the present credit system. Many, especially those of the tenant class, pay the supply merchant an advance of from 25 to 35 cents on a dollar's worth of supplies, and these supplies are actual necessities. These accounts ordinarily run from six to eight months. Such exorbitant rates of interest would be disastrous to any class of people. When the crop is harvested the farmer disposes of his cotton and settles his accounts with the proceeds, provided, of course, that he receives sufficient funds for this purpose. Then it is usually necessary for him to mortgage his next year's crop to the supply merchant in order to obtain credit, which is necessary to enable him to live while the crop is being made. While it is difficult to see how this situation can be remedied, owing to the fact that these tenants have no means of living while the crop is being made without trading with supply merchants, it does seem that the situation would be improved greatly by establishing a system of warehouses and encouraging the tenants to store such cotton as is not absolutely necessary to settle their accounts. If this plan should be pursued for two or three years, while economy in living was exercised, many could eventually free themselves from the present system.

The merchant is almost as helpless as the farmer. He advances supplies while expecting cotton to bring a fairly good price. In most cases he has bought his stock on time and can not meet his own obligations until the farmers' accounts are paid. Whenever the price is so low that the farmer fails to meet his obligations, the merchant is likely to be seriously embarrassed. Late in 1914, for instance, many farmers refused positively to sell their cotton, and many of them failed to meet their obligations, thus making it especially hard on the merchant. When the price is unusually low, as in the present emergency, the merchant can not afford to "close out" the tenant. The cotton, if thrown on the market, would not bring enough to settle the account. If the merchant insisted on selling the cotton he necessarily would lose much of the money due him.

It is equally true that the local banker is helpless in such a situation. His bank advances some money to local merchants and some to the farmers. He has borrowed most of this money from some larger institution which is usually located outside of the cotton-producing section. He is supposed to pay this money back at the time that cotton is picked. When the farmer fails to meet his obligation the merchant naturally finds it difficult to pay his banker. Then the local banker is dependent upon the mercy of the larger institution.

A well-organized system of cotton warehouses would be of the greatest assistance to the farmer, the supply merchant, and the local banker in financing the cotton crop, especially in tiding over an emergency. There is a serious need for warehouses whose receipts would be accepted as an absolute guarantee that a certain amount of cotton of a definite grade and in marketable condition had been stored with the warehouse company. Under such conditions it would be very easy for the farmer to store his cotton and offer the receipts to his supply merchant as collateral for extending the time in which his account must be paid. The merchant in turn could surrender these receipts to the local banker and extend the time of his loan. The local banker would then use these receipts in a similar way to extend the time of his loan with the larger institution. In practically every instance the large banker would be glad to extend the time of payment when these receipts were offered as collateral. In many instances the rate of interest would be greatly reduced. This is one of the very important functions of an efficient system of warehouses, and the need of such a system is extremely urgent.

## GENERAL DISCUSSION OF STORAGE FACILITIES.

It will be shown (Table VII, p. 17) that the warehouses now in use are entirely ample in total storage capacity when we consider the South as a whole. The investigations indicate that if all storage houses, including those belonging to cotton mills in the cotton-growing States, were used, every bale of an average crop could be stored. There is never a year when there is a demand for this amount of storage space. Some cotton is always shipped direct from the gins through the compresses to New England and to Europe. Some is kept on the farm for several months. When this is taken into consideration, it appears that the storage capacity of the buildings now in use is entirely adequate.

### DISTRIBUTION OF WAREHOUSES.

This, however, does not mean that every person who has cotton is able to get it stored on favorable terms. While the facilities in a general way are ample in most of the States, in others they are entirely inadequate. By referring to Table VII it will be seen that the warehouses of Virginia, Florida, Tennessee, and Louisiana have a storage capacity much greater than the production of cotton in those States, but most of the warehouses are located in the shipping centers, namely, Norfolk, Newport News, Jacksonville, Pensacola, Memphis, and New Orleans. While from a glance at the table it would seem that the facilities in these States are adequate, probably it is true that the cotton-producing sections are very poorly supplied with storage houses. A farmer who wishes to hold cotton in these sections would have to keep it on the farm uninsured or ship it to a cotton factor in one of the large towns.

#### GEORGIA.

In Table I (p. 7) an attempt is made to illustrate the distribution of warehouses in Georgia. The first half of the table shows the 10 counties having public and private cotton warehouses with the greatest aggregate storage capacity, and the second section shows the 10 counties producing the most cotton in 1913. The same table shows the total production of cotton in 1913 in running bales for all the counties listed. The first section shows 103 public and private warehouses reported in the 10 counties, with a total storage capacity of 419,280 bales. The 47 cotton mills reporting can store 192,475. This makes a total capacity for the 10 counties of 611,755 bales. These figures are for uncompressed cotton. Many of these warehouses usually receive compressed cotton. There are also 37 warehouses located in these counties which have not reported. Taking this into consideration it would be safe to say that, in all, the warehouses in these 10 counties could store almost 1,000,000 bales of cotton. The table shows further that the production of these counties for 1913 was only 170,375 bales, as reported by the United States Census Bureau.

The second section of this table shows the conditions in the 10 counties producing the most cotton in 1913. It will be seen that 112 warehouses in these counties have a storage capacity of only 118,255 bales. The 10 cotton mills reporting can store 15,400 bales, making a total storage capacity for the 10 counties of only 133,655 bales, while the 1913 production for these counties was 437,605 bales.

TABLE I.—*Showing the production of cotton in certain counties in Georgia, in running bales, and the distribution of warehouses, their number, character, and storage capacity, in flat bales.*

| County. | Production in running bales, 1913. | Mill warehouses. | | Other warehouses. | | Total warehouse capacity in flat bales. |
|---|---|---|---|---|---|---|
| | | Number reporting. | Capacity in flat bales. | Number reporting. | Capacity in flat bales. | |
| Bibb | 10,690 | 3 | 19,800 | 7 | 40,500 | 60,300 |
| Chatham | | | | 8 | 53,000 | 53,000 |
| Clarke | 13,291 | 7 | 7,300 | 5 | 35,500 | 42,800 |
| Dooly | 39,365 | | | 18 | 22,780 | 22,780 |
| Fulton | 2,544 | 8 | 32,900 | 3 | 44,100 | 77,000 |
| Jackson | 44,550 | 3 | 3,800 | 16 | 19,850 | 23,650 |
| Muscogee | 7,940 | 8 | 47,875 | 4 | 37,500 | 85,375 |
| Richmond | 10,765 | 6 | 25,000 | 20 | 121,950 | 146,950 |
| Stewart | 16,178 | | | 15 | 22,850 | 22,850 |
| Troup | 25,052 | 12 | 55,800 | 7 | 21,250 | 77,050 |
| Total | 170,375 | 47 | 192,475 | 103 | 419,280 | 611,755 |
| Bulloch | 41,667 | | | 2 | 4,000 | 4,000 |
| Burke | 53,687 | | | 6 | 6,800 | 6,800 |
| Carroll | 39,878 | 3 | 5,500 | 17 | 10,575 | 16,075 |
| Dooly | 39,365 | | | 18 | 22,780 | 22,780 |
| Emanuel | 41,298 | | | 10 | 9,850 | 9,850 |
| Jackson | 44,550 | 3 | 3,800 | 16 | 19,850 | 23,650 |
| Laurens | 53,740 | 1 | 1,200 | 16 | 11,550 | 12,750 |
| Sumter | 39,005 | | | 11 | 13,000 | 13,000 |
| Terrell | 38,614 | | | 10 | 10,350 | 10,350 |
| Walton | 45,801 | 3 | 4,900 | 6 | 9,500 | 14,400 |
| Total | 437,605 | 10 | 15,400 | 112 | 118,255 | 133,655 |

It will be seen that the number of warehouses in the first group of counties is less than the number in the second group. The average storage capacity in the first group is approximately 4,000 bales, while in the other it is approximately 1,000. It will be seen further that only two counties appear in both of these groups. This table is presented to illustrate the fact that the warehouses are not distributed with reference to production. It also shows that the larger and better storage houses are located in the nonproducing counties. It is well to note the fact that Georgia has a greater number of warehouses than any other State, and that their distribution is probably better, but even in this State the distribution is not such as to best serve the farmer.

### NORTH CAROLINA.

Table II (p. 8) gives the same information for certain counties in North Carolina that Table I gives for Georgia. It is interesting to note that some of the counties of this State which have warehouses with large combined storage capacity have a very small production. It will be noticed further that some of the counties which produce large amounts of cotton have very few warehouses or frequently none at all. When the survey of this State was being made, it was very noticeable that the facilities available were entirely inadequate, and that those storage houses which were in use were not so distributed as to be of the greatest benefit to the cotton producer. It will be seen that 10 counties have 39 warehouses, with a total capacity of 133,770 bales. These are the 10 counties having the largest amount of storage space, yet the production for the same counties in 1913 was 183,483 bales, or approximately 50,000 bales more than could be stored in all the public and private warehouses. These counties also have 90 cotton mills, whose warehouses have a total capacity of 107,525 bales, making a combined storage capacity for these counties of 241,295 bales.

TABLE II.—*Showing the production of cotton in certain counties in North Carolina, in running bales, and the distribution of warehouses, their number, character, and storage capacity in flat bales.*

| County. | Production in running bales, 1913. | Mill warehouses. | | Other warehouses. | | Total warehouse capacity in flat bales. |
|---|---|---|---|---|---|---|
| | | Number reporting. | Capacity in flat bales. | Number reporting. | Capacity in flat bales. | |
| Cleveland | 23,482 | 17 | 13,625 | 7 | 5,570 | 19,195 |
| Cumberland | 19,155 | 7 | 7,600 | 3 | 11,300 | 18,900 |
| Franklin | 15,536 | 1 | 3,500 | 5 | 6,800 | 10,300 |
| Gaston | 13,706 | 35 | 34,150 | 6 | 9,600 | 43,750 |
| Guilford | 435 | 7 | 22,500 | 1 | 15,000 | 37,500 |
| Mecklenburg | 31,164 | 13 | 14,750 | 5 | 32,000 | 46,750 |
| New Hanover | ... | 2 | 750 | 2 | 30,000 | 30,750 |
| Sampson | 21,510 | ... | ... | 4 | 9,300 | 9,300 |
| Wake | 28,530 | 6 | 8,050 | 3 | 5,100 | 13,150 |
| Wayne | 29,965 | 2 | 2,600 | 3 | 9,100 | 11,700 |
| Total | 183,483 | 90 | 107,525 | 39 | 133,770 | 241,295 |
| Edgecombe | 29,676 | 4 | 8,100 | 4 | 1,800 | 9,900 |
| Halifax | 32,110 | 5 | 11,400 | 2 | 1,700 | 13,100 |
| Johnston | 38,751 | 6 | 9,900 | 2 | 1,200 | 11,100 |
| Mecklenburg | 31,164 | 13 | 14,750 | 5 | 32,000 | 46,750 |
| Nash | 29,860 | ... | ... | ... | ... | ... |
| Robeson | 54,039 | 6 | 12,400 | 3 | 3,700 | 16,100 |
| Scotland | 27,649 | 6 | 10,300 | ... | ... | 10,300 |
| Union | 31,409 | 4 | 5,600 | 3 | 4,200 | 9,800 |
| Wake | 28,530 | 6 | 8,050 | 3 | 5,100 | 13,150 |
| Wayne | 29,965 | 2 | 2,600 | 3 | 9,100 | 11,700 |
| Total | 333,153 | 52 | 83,100 | 25 | 58,800 | 141,900 |

In the second part of this table it will be seen that the 10 counties listed have only 25 warehouses and that these can store only 58,800 bales. On the other hand, the total production of cotton is 333,153 bales, or almost six times the amount of the total storage capacity of all the public and private warehouses. More than one-half of this space is located in one county, and this is used almost entirely by cotton dealers. These counties have 52 cotton mills which can store 83,100 bales. Adding this to the capacity of public and private warehouses, we have a maximum possible storage space for these counties of only 141,900 bales, which is less than one-half the annual production for the same counties. When we take into consideration the fact that very few of the cotton mills allow the farmer to use any of their storage houses and that many of the other warehouses are intended primarily for the private use of merchants and cotton factors, it will be seen that the farmers at best could store only a very small proportion of their annual production.

In many primary markets there are no storage houses at all. Cotton frequently remains on the ground, in public yards, and about supply stores for weeks, where it is damaged by weather and endangered by fire. In North Carolina cotton is stored by the dealer in order to aid in financing his transactions, but seldom by anyone for protection from "country damage."

### GEORGIA AND ALABAMA.

On further examination Table VII seems to indicate that Georgia and Alabama are best served at present, especially when we take into consideration the distribution of warehouses with reference to production. These States have by far a greater number of warehouses than any others. In Georgia 1,089 public and private warehouses and the storage houses belonging to 151 cotton mills have a combined capacity of 2,105,780 bales, which is not far short of the 1913 production. Something of the distribution of these warehouses has been shown in Table I. As previously noted, it appears that, with reference to distribution, Georgia is better supplied with cotton warehouses than any other State. The available storage space in Alabama is greater than the annual production, and the fact that there are 581 warehouses seems to denote that those now in use in that State are fairly well distributed.

### SOUTH CAROLINA, MISSISSIPPI, AND OKLAHOMA.

Reports indicate that the situation in South Carolina, Mississippi, and Oklahoma is about the same. We see from Table VII that each of these States has a storage capacity slightly in excess of the production, but the number of warehouses in each of these States is much less than in Georgia and Alabama. Owing to the fact that the investigations in these States have been very limited, it is not possible to state the situation definitely. But the comparatively small number of warehouses would seem to indicate that they are located in the principal towns. This means that many of the small and even medium-sized towns are not well supplied with storage houses. The trouble in these States is not necessarily with the total storage capacity of the cotton warehouses, but with the poor distribution of those now in use.

### ARKANSAS AND NORTH CAROLINA.

It will be seen (Table VII) that the warehouse space in Arkansas is insufficient to shelter the annual production and that the number of warehouses is small. It must be considered further that a number of large warehouses are located in Pine Bluff and Fort Smith. This would seem to show that many of the small towns are not properly supplied. The situation is very much the same in North Carolina. It will be seen that the number of warehouses, not including those belonging to the cotton mills, is very small. The combined storage capacity of public and private warehouses and storage houses belonging to cotton mills falls far short of the annual production. It is known that comparatively few of the mills permit farmers to use their warehouses. Many of the mills buy the cotton which they use from other States. From a rather thorough investigation of conditions in this State it has been found that very few of the small towns have any warehouses. Most of the warehouses in the State are located in a few of the central markets and are controlled and used primarily by the dealers. North Carolina is probably in more serious need of storage houses than any of the other cotton-producing States. It would seem that many new warehouses could be constructed and operated at a profit in this State. The warehouses at Norfolk, Va., are used largely, however, by North Carolina merchants, and this tends to relieve the situation, especially in the northeastern part of the State.

### TEXAS.

It will be seen (Table VII) that the storage capacity (as offered) of all the warehouses in Texas is more than a million bales short of the annual production. Reports from this investigation show that more than half of this space is located in Galveston and Houston. This shows clearly that the warehouses in the producing sections are entirely inadequate. As there are only 497 warehouses in the State, it can be assumed that most of them are large and located in the more important towns. This seems to be conclusive proof that only a comparatively small percentage of the farmers could store their cotton if they wished to do so.

### SUMMARY OF DISTRIBUTION.

In summarizing the storage situation it may be repeated that the cotton warehouses now in use have an ample storage capacity, but they are so located and the conditions under which they operate are such that in many cases they do not serve their purposes. In North Carolina, Arkansas, and Texas the total capacity of all of the warehouses is not equal to the annual production, and those that are in use are not properly distributed. In Georgia and Alabama storage facilities seem to be ample in volume and fairly well distributed, but the service is not of the best. In the other States facilities are ample in storage capacity, but the warehouses are not properly distributed nor are they so operated as best to serve the producers. In all States a majority of the cotton warehouses do not appear to be rendering efficient service to the industry as a whole.

## SERVICE OF WAREHOUSES NOT SATISFACTORY.

### SPACE NOT AVAILABLE.

While an attempt has been made to show that in storage capacity the warehouses now in use are fully adequate, it is not meant to convey the impression that those who produce cotton can get proper and efficient warehouse service. This is far from the case. Most of the best storage houses belong to the cotton mills and to cotton factors or commission merchants. The mills have built their warehouses for storing the cotton which they buy for spinning. They were never intended as public storage houses, and they are available for such use in very few instances. The factors have not built warehouses for the purpose of doing a storage business, but in order to aid in their regular transactions. But few of these persons would build warehouses for the storage fees they collect, but they are forced to operate the warehouses in order to handle the cotton which is consigned to them for sale. It will be seen, therefore, that but few of the best storage houses now in use are available to the farmer unless he is willing to ship his cotton to the factor and pay him a fee for selling it, in addition to regular storage charges. Many farmers are averse to shipping their cotton to another town and consigning it to a factor or commission merchant. They usually expect to receive the money at the time the cotton is delivered. Many farmers are reluctant to pay any charges whatever. This attitude is unfortunate, for it eliminates them from participation in the use of the best storage facilities.

### THE SMALL WAREHOUSE RENDERS POOR SERVICE.

The service rendered by the small warehouses in the primary markets is almost universally unsatisfactory. The warehouse owners are not to blame for this poor service. The cost of handling is much greater than in the case of larger establishments, and the insurance rate is usually four or five times as great as in the standard warehouses in larger towns. One might at first be inclined to think that they should erect costly buildings, but in most cases this would not pay, for there is not a sufficient volume of business. Very few farmers will store their cotton when the market price is fairly satisfactory. A good storage building might be erected in a small town and a fair profit be made for one year, but it might be four years or even longer before it would again be well patronized. The chances are that during this period the fees collected would not pay the cost of operation. The investor would lose all of the money made in one year in addition to the interest on the funds invested in the building. The result is that most of the warehouses erected in such towns are owned primarily by merchants or cotton buyers for use in connection with their business. They are not intended for the use of farmers, and when a year of very low prices comes they are not in position to render the service that the farmer expects.

### COOPERATION ON THE PART OF FARMERS.

From the foregoing it would seem that the most satisfactory solution of the situation would be for the farmers to form cooperative associations and build their own storage houses. They can not expect others to invest thousands of dollars in storage houses that will lie idle for several years and make a profit for only one year. No business men will invest their money in such a way. Farmers must build their own storage houses or remain dependent upon the merchants and cotton factors. It would seem also that the mills and trade in general should encourage the preservation of cotton by storage by discriminating individually against "country damaged" cotton. This would put a premium on cotton in good condition and would thus tend to encourage storage.

### WAREHOUSES NOT WELL DISTRIBUTED.

It has been stated that in aggregate storage capacity present facilities are ample but the warehouses are not properly distributed. The investigation showed that in many places in every State, including those with the greatest number of warehouses, thousands of bales of cotton are "stored" on the streets and platforms, or left about gins and farms, while all the warehouses in use are filled to their greatest capacity. In other sections of the same State, frequently in the same county, warehouses were found that are used very little. This indicates that very poor judgment has been exercised in the location of storage houses and that those who have cotton to be protected can not get the service which might be expected from the figures shown in Table VII. Doubtless many new warehouses should be erected in sections that are not now served. Many of the houses which have been improperly planned should be reconstructed in order to obtain better insurance rates and render better service. Some of the inferior houses should be destroyed or used for hay barns or for other purposes. Wherever possible, the farmer should be allowed the use of cotton mill and other private warehouses, and he should be encouraged in every possible way to store and protect his cotton. On the other hand, he should be willing to change his present practice and his ideas in regard to the storage business.

## STORAGE FACILITIES NOW AVAILABLE.

### GEORGIA AND NORTH CAROLINA.

Table III (p. 13) gives the results of the survey in Georgia and North Carolina. It will be seen that the storage capacity of warehouses is given in flat or uncompressed bales, in cotton as offered, and also in the compressed form. All the figures relating to the storage capacity of warehouses belonging to cotton mills refer to uncompressed or flat cotton. In the investigation in these States information as to the storage capacity of all warehouses in flat bales was requested. From this list a careful estimate has been made of the quantity in compressed cotton which these same warehouses could store. A detailed study of the entire situation has been made in order to ascertain which warehouses ordinarily receive flat cotton and which receive compressed cotton. "Capacity as offered" in the table represents the total number of bales which these warehouses would hold, in the form in which it is usually offered, as thus estimated. This table also shows the total number of warehouses in the State, the number reporting, and the number not reporting. The capacities entered in the table are for those warehouses which made reports.

Table III also shows the storage capacity of the warehouses owned by cotton mills in Georgia and North Carolina. The data upon which this table is based were secured directly from the mills. A letter of inquiry was sent to all cotton mills in these States asking for information regarding storage facilities, including the capacity of their warehouses, and insurance rates. The table shows the number of mills reporting, together with the total storage capacity of the warehouses belonging to those of each State.

TABLE III.—*Number and storage capacity of warehouses in Georgia and North Carolina (beginning of 1913–14 season).*

| Kind of warehouses. | State. | Total number | Number reporting. | Number not reporting. | Capacity in bales.[2] | | |
|---|---|---|---|---|---|---|---|
| | | | | | Flat. | As offered. | Compressed. |
| Public and private. | Georgia | 990 | 668 | 322 | 1,038,445 | 1,281,745 | 1,746,060 |
| | North Carolina | 128 | 114 | 14 | 182,705 | 229,205 | 318,855 |
| Cotton mill | Georgia | 151 | 123 | 28 | 397,875 | | |
| Do | North Carolina | 326 | 274 | 52 | 368,495 | | |

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[1] Data secured from warehouses.

[2] The totals given here include only the warehouses reporting.

## THE COTTON BELT IN GENERAL.

Table IV (p. 14) gives the result of a letter of inquiry sent to the county agents in the cotton-growing States. Written reports were received from these agents which gave the names and storage capacities of the number of warehouses in each State entered in this table. Some of these reports referred to cotton in the uncompressed form, some to compressed bales, and still others did not indicate to which form they referred. As a result of a careful estimate, there is shown in one column the number of flat bales these warehouses could store, and in another the number of compressed bales. The form in which cotton is ordinarily offered for storage has also been determined as nearly as possible, and the capacity as thus estimated is given under the column headed "As offered."

TABLE IV.—*Number and storage capacity of warehouses in the cotton belt (August, 1914) as reported by the county agents.*

| State. | Number reporting. | Storage capacity in bales. | | |
|---|---|---|---|---|
| | | Flat. | As offered. | Compressed. |
| Alabama | 264 | 740,425 | 856,525 | 1,246,150 |
| Arkansas | 106 | 365,100 | 508,400 | 631,900 |
| Florida | 46 | 204,600 | 325,300 | 345,700 |
| Georgia | 214 | 605,350 | 690,500 | 1,009,800 |
| Louisiana | 91 | 519,000 | 689,900 | 774,700 |
| Mississippi | 76 | 405,700 | 693,550 | 757,200 |
| North Carolina | 55 | 60,550 | 60,550 | 101,700 |
| Oklahoma | 47 | 244,365 | 379,665 | 419,475 |
| South Carolina | 153 | 597,800 | 746,800 | 1,006,400 |
| Tennessee | 28 | 529,350 | 835,850 | 850,010 |
| Texas | 226 | 1,223,820 | 1,904,670 | 2,221,950 |
| Virginia | 27 | 199,900 | 287,800 | 299,150 |
| Total | 1,333 | 5,695,960 | 7,979,510 | 9,664,135 |

Table V (p. 14), which is an estimate of the storage capacity of the warehouses available at the end of the 1913–14 season, is made up from a detailed comparison of Tables III and IV. By referring to Table III it will be seen that the complete list of Georgia contains 990 warehouses. Of these, 668 have reported, and as shown in Table III they have a storage capacity of 1,038,445 flat bales, 1,281,745 bales as offered, or 1,746,060 compressed bales. This is an average capacity for the warehouses reporting of 1,555 flat bales, 1,770 as offered, or 2,600 compressed. From a careful survey of the State it has been ascertained that many warehouses not reporting have a large storage capacity, and it is believed that the average capacity of those not reporting is as great, if not greater, than the average for the 668 which reported. But in making these estimates, in order to be very conservative, it is assumed that the average capacity of those not reporting in flat bales is only 600, as offered 800, and compressed 1,000. If these amounts are added to the amounts actually reported, the total storage capacity for Georgia is: Flat, 1,231,645 bales; as offered, 1,539,345 bales; and compressed, 2,068,060 bales.

TABLE V.—*Estimated number and storage capacity of warehouses in the cotton belt (beginning of the 1913–14 season).*

| State. | Total number. | Storage capacity in bales. | | |
|---|---|---|---|---|
| | | Flat. | As offered. | Compressed. |
| Alabama | 528 | 1,480,850 | 1,713,050 | 2,492,300 |
| Arkansas | 212 | 649,800 | 878,000 | 925,000 |
| Florida | 46 | 204,600 | 325,300 | 345,700 |
| Georgia | 990 | 1,231,645 | 1,539,345 | 2,068,060 |
| Louisiana | 182 | 736,000 | 996,300 | 1,145,900 |
| Mississippi | 152 | 811,400 | 1,387,100 | 1,514,400 |
| North Carolina | 128 | 191,105 | 240,405 | 332,855 |
| Oklahoma | 94 | 488,730 | 759,330 | 838,950 |
| South Carolina | 306 | 1,051,600 | 1,239,600 | 1,715,800 |
| Tennessee | 28 | 529,350 | 835,850 | 850,010 |
| Texas | 452 | 1,769,540 | 2,284,840 | 3,210,700 |
| Virginia | 27 | 199,900 | 287,800 | 299,150 |
| Total | 3,145 | 9,344,520 | 12,486,920 | 15,738,825 |

The same plan was followed in arriving at the storage capacity of North Carolina warehouses. By referring again to Table III, it will be seen that the average storage capacity for the 114 warehouses reporting from this State is 1,602 flat bales, 2,015 bales as offered, and 2,709 compressed bales. This is very close to the average in Georgia, and the same figures have been used in determining the probable storage capacity of the 14 warehouses not reporting; namely, 600 flat, 800 as offered, and 1,000 compressed. This gives the following total capacity for North Carolina: Flat bales, 191,105, as offered 240,405, and compressed 332,855.

By referring further to Table III, it will be seen that the complete list for Georgia comprises 990 warehouses. Table IV shows that the county agents reported only 214 warehouses with the storage capacity indicated. This is less than one-fourth of the number on the complete list. In North Carolina the agents reported only 55 warehouses, which is less than one-half the number that are in use in that State. In arriving at the number of warehouses for the different States it would seem justifiable to estimate that the agents reported about one-third or one-fourth of the actual number, inasmuch as they reported less than one-fourth of the number actually existing in the States of Georgia and North Carolina combined, where detailed surveys had been made. But in order to be on the safe side, it has been assumed that they reported approximately one-half of the number in each cotton State, except Georgia and North Carolina, in which States the number indicated by the survey has been used. Doubling the number of warehouses reported by the county agents as shown in Table IV, there results the number given in Table V. The exact number reported in Virginia, Florida, and Tennessee is shown, as the warehouses in these three States are located chiefly in large cities, and it is believed that fairly complete figures have been obtained.

The next problem is to arrive at the storage capacity in the different States. It has been explained how this estimate was made for Georgia and North Carolina, and, it will be remembered, this was based on a comprehensive survey of these States. Comparing again Tables IV and V, it will be seen that the reports of the county agents for Georgia show a total storage capacity of less than one-half of that actually developed by the comprehensive survey. In North Carolina the same reports cover less than one-third of the storage space which actually exists. This seems to be sufficient justification for multiplying the capacities shown in Table IV by two and one-half or even by three. But instead of doing this, after eliminating the large shipping centers, the capacities reported by the county agents have been doubled, except in Georgia and North Carolina, where the figures of the complete survey are used. The reported capacity of warehouses for Virginia, Florida, and Tennessee has not been increased. In addition, the storage space as reported for Charleston, New Orleans, Houston, Galveston, Memphis, and Pine Bluff (Ark.), is given as reported. In these towns there are many large storage houses, and the reports seem to indicate that they cover the complete storage capacity.

Table VI (p. 16) is derived directly from Table V. The figures given in Table V are believed to be a very safe estimate of the available storage facilities in the South in the early part of 1914 or during the cotton season of 1913–14. It is impossible to state, of course, just how many new warehouses have been erected and how much the total storage capacity has been increased in this way. Many storage houses have been constructed to help meet the present emergency. This increase has been estimated at 10 per cent, which is a very conservative estimate. Table VI is the same as Table V with a 10 per cent increase in the number of warehouses and a like increase in the total storage capacity. In another column is shown the 1913 production by States in running bales[1] as reported by the Census. In this way a comparison between the storage facilities now available and the production can be made very readily.

TABLE VI.—*Estimated number and storage capacity of all warehouses in the cotton belt, making allowance for a 10 per cent increase since August, 1914, compared with the production in running bales, by States.*

| State. | Number. | Storage capacity in bales. | | | 1913 production in running bales. |
|---|---|---|---|---|---|
| | | Flat. | As offered. | Compressed. | |
| Alabama | 581 | 1,628,935 | 1,884,355 | 2,741,530 | 1,483,669 |
| Arkansas | 233 | 714,780 | 965,800 | 1,017,500 | 1,038,293 |
| Florida | 51 | 225,060 | 357,830 | 380,270 | 66,700 |
| Georgia | 1,089 | 1,354,810 | 1,693,280 | 2,274,866 | 2,346,237 |
| Louisiana | 200 | 809,600 | 1,095,930 | 1,260,490 | 436,865 |
| Mississippi | 167 | 892,540 | 1,525,810 | 1,665,840 | 1,251,841 |
| North Carolina | 149 | 210,216 | 264,446 | 366,141 | 842,499 |
| Oklahoma | [1] 120 | 540,600 | 842,330 | 927,845 | 837,995 |
| South Carolina | 337 | 1,156,760 | 1,363,560 | 1,887,380 | 1,418,704 |
| Tennessee | 31 | 582,285 | 919,435 | 935,011 | 366,786 |
| Texas | 497 | 1,946,494 | 2,513,324 | 3,531,770 | 3,773,024 |
| Virginia | 30 | 219,890 | 316,580 | 329,065 | 24,569 |
| All others | | | | | 95,629 |
| Total | 3,485 | 10,281,970 | 13,742,680 | 17,317,708 | 13,982,811 |

[1] The names of 26 companies reporting to us have been added. This is more than the 10 per cent added for other States from which no reports were received of the number of new warehouses.

In connection with the estimate of the probable increase in storage facilities, it may be well to state that the Marketing Division of the North Carolina Experiment Station has published the results of an investigation which indicate that the storage space provided since the 1913–14 season in that State would be sufficient to store 134,915 bales. By referring to Table V it will be seen that this is an increase of almost 100 per cent over the space available in 1913–14.

In Oklahoma 41 warehouse companies were chartered from the first of September, 1914, to about the middle of October of the same year. Letters were sent to these companies to determine whether they had actually constructed buildings, and if so, the storage capacities of these new warehouses. Replies were received which show that 26 of the 41 companies have actually constructed buildings and are doing a storage business. The reported capacity of these 26 warehouses is 53,250 bales. This is an increase of over 10 per cent in the cotton storage space in the State, and 20 per cent in the number of warehouses. It is certain that many other warehouses have been constructed since that time, and, in all probability, a number of persons who have not applied for charters are doing a storage business. In view of the fact that these two investigations show such a large increase in the apparent storage facilities in the autumn of 1914, the estimate of 10 per cent as the average increase for the cotton belt must appeal to everyone as being very conservative.

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[1] By the term "running bales" is meant the actual number of bales produced, which is not exactly the same as the number of 500-pound bales ordinarily used for statistical purposes.

## ESTIMATED STORAGE CAPACITY OF COTTON-MILL WAREHOUSES.

### GEORGIA.

In Georgia there are 151 cotton mills (Table VII). Reports received from 123 of these show that the total capacity of their warehouses is 398,875 bales of uncompressed cotton (see Table III). This is an average of 3,317 bales per mill. Making the supposition that the 28 mills not reporting have warehouses of equal average capacity, their total storage capacity is almost 100,000 bales. This, added to the figures actually reported, would give a combined storage capacity of almost 500,000 bales. In order to avoid any overestimation, it has been assumed that only 15 of the 28 cotton mills have storage houses and that the average capacity of these warehouses is 1,000 bales, or less than one-third the average capacity of those reporting. This would give a total storage capacity of 15,000 bales. Adding this to the 397,875 bales actually reported gives an estimated total capacity for the mill warehouses of the State of 412,500 bales. Any error that may exist in this estimate is on the conservative side.

TABLE VII.—*Estimated number and storage capacity of warehouses and cotton-mill warehouses now in use compared with the production of each State, in running bales, for 1913.*

| State. | Warehouses. | | Cotton mills. | | Combined storage capacity. | 1913 production in running bales. |
|---|---|---|---|---|---|---|
| | Number. | Capacity in bales as offered. | Number. | Capacity in flat bales. | | |
| Alabama | 581 | 1,884,355 | 62 | 62,000 | 1,946,355 | 1,483,669 |
| Arkansas | 233 | 965,800 | 6 | 6,000 | 971,800 | 1,038,293 |
| Florida | 51 | 357,830 | 1 | 1,000 | 358,830 | 66,700 |
| Georgia | 1,089 | 1,693,280 | 151 | 412,500 | 2,105,780 | 2,346,237 |
| Louisiana | 200 | 1,095,930 | 6 | 6,000 | 1,101,930 | 436,865 |
| Mississippi | 167 | 1,525,810 | 18 | 18,000 | 1,543,810 | 1,251,841 |
| North Carolina | 149 | 264,446 | 326 | 400,995 | 665,441 | 842,499 |
| Oklahoma | 120 | 842,330 | 7 | 7,000 | 849,330 | 837,995 |
| South Carolina | 337 | 1,363,560 | 164 | 300,000 | 1,663,560 | 1,418,704 |
| Tennessee | 31 | 919,435 | 27 | 27,000 | 946,435 | 366,786 |
| Texas | 497 | 2,513,324 | 36 | 36,000 | 2,549,324 | 3,773,024 |
| Virginia | 30 | 316,580 | 19 | 19,000 | 335,580 | 24,569 |
| All others | | | | | | 95,629 |
| Total | 3,485 | 13,742,680 | 823 | 1,295,495 | 15,038,175 | 13,982,811 |

### NORTH CAROLINA.

In North Carolina there are 326 cotton mills (Table VII). Reports were received from 274 of these, showing the total storage capacity of these mill warehouses to be 368,495 flat bales, or an average of 1,346 bales each. If it is assumed that the mills not reporting have an average capacity equal to those reporting, their combined storage capacity would amount to about 70,000 bales. Adding this to the amount actually reported, we have a total of about 440,000 bales, but, as in the case of Georgia, in order to avoid the possibility of any overestimation it has been assumed that only 26 of the 52 mills have warehouses and that the average storage capacity of these is only 1,250 bales. Their combined capacity at this rate would be 32,500 bales, which, added to the amount actually reported, gives the aggregate storage capacity of the cotton mills of the State as 400,995 bales. There is every reason to believe that this is a very low estimate. Some of the largest mills of the State are among those which failed to make reports. The average storage capacity of the warehouses belonging to the cotton mills thus failing to report is doubtless greater than that of those which have reported.

### SOUTH CAROLINA.

In South Carolina there are 164 cotton mills. Reports from county agents show that 62 of these mills have warehouse space for 234,900 bales, or an average of 3,600 bales each. If the average for all the cotton mills of the State should equal the 62 included in these reports, a total of 590,000 bales could be stored. From general observations and conferences with many of the cotton-mill men in South Carolina it is believed that the storage space of the mills is on the average very large. An estimate of 600,000 bales apparently would be justified by the reports at hand. However, an estimate of only 300,000 bales for the State, or approximately one-half of the apparent storage capacity, has been used.

### OTHER STATES.

For all the remaining States it is assumed that each cotton mill has a storage capacity of 1,000 bales. In no State which has been investigated in detail is the average storage space of the mills so small as this. Estimates of the capacity of mill warehouses in each of the cotton-producing States, determined in the manner just explained, will be found in Table VII, which shows the storage capacity of warehouses for cotton as offered, as given in Table VI, with the figures for the cotton mills added. This table shows the estimated number of warehouses and their storage capacity in bales as offered, and the number of cotton-mill warehouses with their estimated capacity in flat bales. But many of the mills use compressed cotton, so the estimate for the warehouses belonging to cotton mills might be increased greatly without danger of making it too great. In the column headed "Combined storage capacity for State" is shown the total of both the public and private warehouses and cotton-mill warehouses.

### STORAGE CAPACITY COMPARED WITH PRODUCTION.

The next column (Table VII) shows the 1913 production of each of the States. It will be seen that the storage capacity of all the warehouses is greater than the production. In addition to making conservative estimates in every case, the list does not include warehouses in St. Louis, Evansville, and the storage houses belonging to the cotton mills in Missouri. Cotton is moving to eastern ports constantly and being exported, and extensive warehouses belonging to the cotton mills in New England are used, all of which tends to increase the available storage space. Further, efforts have been made to exclude compress sheds and terminal sheds belonging to railroads and other transportation companies, so in presenting this estimate it is believed that it is too low throughout rather than too high in any instance.

## INSURANCE RATES AND COST OF BUILDINGS.

### DISCUSSION OF TYPES.

Table VIII (p. 20) gives important data relating to the different types of warehouses now in use. It is particularly interesting to notice the difference in the cost of constructing the same type of warehouse in different States. A comparison of cost and insurance rates of different types in the same State is also interesting. For example, the ordinary brick warehouse costs more than a standard warehouse with board ends and fire walls, and at the same time pays a much higher insurance rate. Further, it is shown that those warehouses that are equipped with automatic sprinklers (Table IX) have cost very little more than the others; yet they have a very much lower insurance rate. The automatic sprinkler is costly, but the reduction of insurance rates helps to offset the additional cost of installation. The data in the tables show clearly that it is best to construct standard warehouses and equip them with automatic sprinklers. This unquestionably will effect a great saving. In Georgia and North Carolina the insurance rate is reduced about 80 per cent by the use of sprinklers. It is decidedly interesting to notice the lower cost of construction and the lower insurance rate on the warehouses belonging to the cotton mills in each of the States (Table X). From this it may be concluded that a great saving could be effected by the erection and proper equipment of modern warehouses conforming to the standards promulgated and recommended by the underwriters associations.

TABLE VIII.—*Comparative cost, storage capacity, insurance rates, and other data concerning public and private warehouses classified according to construction.*

| State. | Type of warehouse (construction). | Number. | Total capacity in flat bales. | Average capacity in flat bales. | Total cost. | Cost per bale capacity. | Average insurance rate. |
|---|---|---|---|---|---|---|---|
| Georgia | Wood | 26 | 14,250 | 548 | $48,350 | $3.40 | $3.30 |
| | Corrugated iron | 69 | 53,935 | 782 | 125,820 | 2.35 | 2.70 |
| | Brick | 215 | 280,170 | 1,303 | 1,089,500 | 3.89 | 1.95 |
| | Standard | 5 | 10,700 | 2,140 | 31,750 | 2.97 | 1.52 |
| | Concrete or stone | 22 | 20,750 | 944 | 76,500 | 3.64 | 2.29 |
| North Carolina | Brick | 11 | 14,000 | 1,273 | 40,950 | 2.925 | 1.96 |
| | Standard | 5 | 13,250 | 2,650 | 30,450 | 1.54 | 1.25 |
| Oklahoma | Corrugated iron | 22 | 27,850 | 1,266 | 27,820 | 1.00 | 2.20 |

TABLE IX.—*Comparative cost, storage capacity, insurance rates, and other data concerning public and private warehouses classified according to sprinkler equipment.*

| State. | Equipment of warehouses. | Number. | Total capacity in flat bales. | Average capacity in flat bales. | Total cost. | Cost per bale capacity. | Average insurance rate. |
|---|---|---|---|---|---|---|---|
| Georgia | With sprinklers | 30 | 129,200 | 4,307 | $527,900 | $4.09 | $0.246 |
| | Without sprinklers | 30 | 63,200 | 2,107 | 248,600 | 3.77 | 1.67 |
| North Carolina | With sprinklers | 8 | 47,900 | 5,988 | 173,500 | 3.62 | .238 |
| | Without sprinklers | 8 | 8,600 | 1,075 | 22,950 | 2.67 | 1.52 |

### PLAN, EQUIPMENT, AND COST.

It is impossible to overestimate the importance of proper planning, construction, and equipment of cotton warehouses. These have an important bearing not only upon the cost of the structure itself and the cost of handling cotton but also upon insurance rates. The public warehouses now in use which are equipped with automatic sprinklers have cost about $4 per bale storage capacity, and cotton stored in these buildings is insured at an average of about 25 cents on the $100 per annum. These investigations show clearly that the average cost of warehouses not so equipped is not very much less than $4 per bale storage capacity, while the insurance rate is very much higher, comparatively speaking. It is admitted that the automatic sprinkler equipment is expensive, but the warehouses now in use which are equipped with sprinklers are comparatively large, most of them have been built according to the underwriters' standards, and in a general way they have been planned and built on a business basis, which accounts for the saving in cost of construction.

If the present crop of cotton is assumed to be 16,000,000 bales, new warehouses to store all of it could be constructed and equipped with automatic sprinklers for $64,000,000 or less. If all of this crop should be stored for a period of six months the cost of insurance at $2 per $100, which is lower than the average paid at present, would amount to $8,000,000 if the cotton is valued at $50 per bale. In the new warehouses costing $64,000,000 this cotton could be stored for the same length of time at $1,000,000, or 25 cents on the $100 per annum. It seems a radical statement, but it will be seen that if every warehouse now in existence were destroyed and new ones constructed to protect the entire crop, the expenditure of the $64,000,000 would effect an annual saving of $7,000,000, assuming that all the cotton would be stored for a period of six months. This saving of $7,000,000 would represent a fair income on twice the cost of the warehouses.

This is a rather remarkable showing, but if we would profit by the experience of the cotton mills and adopt their methods this saving could be greatly increased. At the cost of constructing the present cotton-mill warehouses (Table X), it would be possible to erect buildings to store the 16,000,000 bales of cotton at a cost of $44,800,000. This would represent a saving in cost of construction of $19,200,000 over the assumed cost. It will be seen further from Table X that the mills in many instances pay an insurance rate of less than 12½ cents on $100. On this basis the 16,000,000 bales of cotton valued at $50 per bale could be stored for six months for $500,000. The figures show that it would be possible to make a saving of $7,500,000 per annum by the investment of approximately $45,000,000 for standard and properly equipped warehouses.

### INSURANCE RATES.

A careful examination of the insurance records in the cotton-producing States shows that the average insurance rate is about 3 per cent per annum, including all cotton risks. These investigations show clearly that the average rate on cotton in the present warehouses is not less than 2 per cent per annum, and if cotton in compress sheds, terminal yards, and various other hazardous places is included, it would seem that an estimate of 3 per cent is not too high. It is therefore safe to use 2 per cent as the basis of the estimates in the preceding paragraphs. Table VIII shows that a large number of brick warehouses in Georgia and North Carolina pay approximately 2 per cent and that the buildings constructed of wood, corrugated iron, concrete, and stone pay a much higher rate, and the cost of construction is also very high for most of these types.

TABLE X.—*Comparative cost, storage capacity, insurance rates, and other data concerning cotton-mill warehouses with automatic sprinklers.*

| State. | Number. | Total capacity in flat bales. | Average capacity in flat bales. | Total cost. | Cost per bale capacity. | Average insurance rate. |
|---|---|---|---|---|---|---|
| Georgia | 64 | 164,700 | 2,573 | $461,698 | $2.80 | $0.122 |
| North Carolina | 73 | 109,950 | 1,506 | 301,900 | 2.76 | .13 |

In comparing the cost of the corrugated iron warehouses in Georgia and Oklahoma, it is well to remember that most of the buildings in Georgia have wooden floors with costly brick foundations, while most of those in Oklahoma have dirt floors, which are very much cheaper and carry a lower insurance rate. It is also true that many of the houses in Oklahoma have been erected expressly for the storage of cotton, while some of the houses in Georgia are used both for cotton and other products, which general use is responsible for a higher rate of insurance.

## GENERAL CONCLUSIONS.

### BENEFITS TO BE DERIVED FROM A SYSTEM OF WAREHOUSES.

It would be impossible to enumerate all of the benefits, direct and indirect, that might be derived from the inauguration of an ample and efficient system of storage houses, but it is evident that such a system would be of great assistance in handling and financing the cotton crop. It would benefit not only the farmer but the merchant, the local banker, and other business men. A storage system properly operated and used would eventually free the cotton farmer from the present destructive credit system. It would improve conditions in the cotton market. Much "country damage" and loss from unnecessary sampling would be prevented, and much of the duplication in handling and marketing cotton under the present complex system would be eliminated. Such a system would enable the farmer to distribute the sales of cotton throughout the year, and in this way avoid depressed prices. Under present conditions the farmer rushes his cotton to market as fast as it can be picked and ginned, and thus "bears" his own market.

### DIFFICULTIES UNDER PRESENT CONDITIONS.

There are many disadvantages connected with the storage business as conducted at present, and there are serious difficulties that must be overcome before an adequate system can be inaugurated. The present facilities are poorly distributed and frequently not available to the farmer. The service rendered by many of the companies is poor, and their charges, including insurance, are unusually high owing to the small amount of cotton ordinarily stored by the farmer. His business is undesirable, for it is much more trouble to handle cotton in small lots. The cotton mills do not encourage the farmer to store his cotton, as their usual practice is to make a general allowance for tare and damage. This average is charged against all cotton, whether it reaches the mill in good or bad condition, so there is little incentive for the farmer and trade in general to go to any trouble or extra expense in protecting the staple. The farmer, therefore, receives practically no benefit from the system now in operation, and it is not at all certain that he would take kindly to any system which might be devised. As a general proposition, he is averse to storing his cotton, especially when he has to pay any direct charge for the service. The majority of farmers have been accustomed to selling their own cotton and receiving the money for it when it is delivered. It is not believed that they would generally patronize any storage house, if to do so it were necessary to ship their cotton to another town. It is equally true that they will not cooperate readily with each other in building storage houses near the place of production.

### SELLING COTTON THROUGH FACTORS.

To anyone spending much time in the cotton markets it becomes evident that our cotton crop is supporting entirely too many men. This is particularly true of buyers and merchants in the primary markets. It is not uncommon, in those cities where from 10,000 to 15,000 bales are marketed in one season, to see four or five and frequently a larger number of buyers on the street. Naturally these men must be paid for their services, and it is quite evident that the cotton itself is taxed to cover this expense. If such a town had one good warehouse and one competent cotton man to represent the farmers, these buyers could be eliminated, and the farmer would receive the benefit in the form of better prices for his cotton. It is true that most farmers prefer making their own sales, but in very few cases do they know the grade of their cotton or the price it should bring. Consequently they are not in a position to make an intelligent sale. It would be much better for farmers to pay a nominal fee for the services of an experienced man. This would save time and trouble and eventually place the cotton trade on a business basis. It would not only eliminate unnecessary persons connected with the markets, but it would save the farmer much time now lost in going to town to make his sale and would prevent the waste resulting from unnecessary sampling.

### VALUE OF PLANS.

The importance of taking the necessary precautions in planning warehouses and adhering to the standards of the underwriters' associations is forcibly illustrated by a comparison of five standard warehouses with sprinkler equipment with five warehouses without such equipment, all of which are located in the same Georgia city. The five warehouses without sprinklers have a total storage capacity of 21,000 flat bales, or an average of 4,200 bales for each warehouse. These buildings cost a total of $82,500, or an average of $3.92 per bale storage capacity. The other five buildings have a total storage capacity of 46,000 bales, or an average capacity of 9,200 bales for each warehouse. These buildings cost $161,000, or $3.50 per bale capacity. The first group of buildings have no automatic sprinkler equipment, and the average insurance rate on cotton stored in these buildings is $2.57 per $100 per annum. The second group of buildings are fully standard, and have approved automatic sprinkler equipment, and the insurance rate on cotton stored in these buildings is only 35 cents per $100 per annum. Those without the sprinklers are small buildings and are not properly planned, and such poor business methods were used in their construction that they cost more than was necessary. On the other hand the five buildings with automatic sprinkler equipment were properly planned. They were erected at a minimum cost, with the greatest efficiency, and have a low insurance rate.

## SIZE OF WAREHOUSE.

It is impossible to state definitely the best size for a public warehouse. These investigations show conclusively that the large, properly organized, advantageously located storage houses pay well, while the small warehouses in most cases do not pay. Other things being equal, it might be said that the larger the storage house the better. Building a large house saves much in cost of construction and reduces the cost of handling the cotton. On the other hand, it is impossible to build only large houses and have them properly distributed. These two points must be taken into consideration, and the proper size for the house will be a compromise between the two. Where towns are very small and shipping facilities to large centers are ample it might be best to have no storage house. On the other hand, many towns where a considerable amount of cotton is marketed annually will do well to have a warehouse. It is frequently the case that in very small towns two or three men each build storage houses. None of them can give efficient service, and they are forced to charge too much for storage, while at the same time they lose money. It would certainly seem that there is a most urgent need of cooperation in the small towns.

## IDEAL WAREHOUSE SYSTEM.

It would probably be unwise to attempt to outline in detail a theoretically ideal warehouse system, but it does seem proper to indicate some essential features of such a system. It should be organized intelligently on a sound business basis, with the best financial standing and connections. Both the company and custodian should be bonded. Some provision should be made for State or Federal inspection. This would give the receipts of the company the greatest possible value, and the holder of such a receipt would be able to borrow money on the very best terms. Each warehouse should be intelligently managed. The man in charge should be well posted on grades and market conditions. This would enable him to render the most efficient service in marketing the farmers' cotton, and thereby avoid the unnecessary profits of the buyer and eliminate various other losses. It is needless to say that the storage houses operated by such a system should be standard in every respect. Cotton should be fully protected by insurance, and convenient forms should be provided for making and recording all transactions. This system should aim eventually to store cotton in the compressed form in order to increase the storage capacity of the building. All warehouses should use uniform receipts, and so far as it is practicable the business should be fully standardized.

### SUMMARY.

1. Financing is one of the greatest problems in marketing cotton. A sufficient number of warehouses would be erected if it were possible in the present emergency to borrow on cotton when stored.

2. Cotton is considered the very best collateral, but it is not available unless safely stored and insured. The banks are always willing to accept cotton as security, but during emergencies their capital is insufficient to meet demands.

3. A system of warehouses would simplify our financial system and eventually free the southern cotton farmer from the present disastrous credit system. It would stabilize the price of cotton by distributing sales throughout the year. The farmer would stop depressing the price of his own products by selling his cotton as soon as it is ginned.

4. In storage capacity the present cotton warehouses are ample, but these warehouses are poorly distributed. The best warehouses are not available to the farmer. The charges of the others are too high because they must pay a high insurance rate and the cost of handling is necessarily great. Some new standard buildings should be erected, but many of those now in use should be remodeled.

5. Cotton keeps in storage better than any other farm product. Protected from the weather it never deteriorates. It resists decay even when exposed. Consequently, it is neglected more than any other valuable product. The cotton mills should encourage storing by paying a premium for cotton in good condition.

6. The dealers, or middlemen as they are frequently called, are in much better position to hold cotton than the farmers. They not only control the best storage houses, but have better financial connections which enable them to get money more readily and on better terms. The farmer sells his cotton when prices are depressed and the dealer gets the full benefit of any advance after the rush is over.

7. A large standard storage house pays ample dividends, while most of the owners of small warehouses actually lose money on the

investment. The fact that the best warehouses belong to the factors and the cotton mills and are not available to the farmer makes it desirable for the farmers to cooperate in building their own houses. If they do not, they must remain dependent upon the factors.

8. All warehouses should conform fully to the standards recognized by the underwriters' associations. This will save cost in construction, in handling cotton, and in insurance.

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